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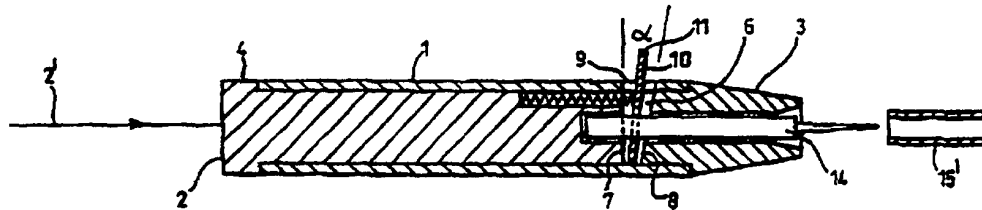
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(54) Abstract Title

Surgical needle holder

(57) A surgical needle holder for a surgical needle particularly for use during ophthalmic treatment and cosmetic surgery. The holder comprises an insulated electrically conducting support body for mounting the needle and releasable locking means for locking the needle in the body and in electrical contact with the support body. The design reduces the need to handle the surgical needle during the mounting thereof in the support body and holds the needle more firmly in position than heretofore possible with prior devices.



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(21) International Application Number: PCT/GB99/00142 (22) International Filing Date: 15 January 1999 (15.01.99) (30) Priority Data: 9800792.5 16 January 1998 (16.01.98) GB (71)(72) Applicant and Inventor: JONES, Michael, Harold [GB/GB]; 248 Old Bath Road, Cheltenham, Gloucestershire GL53 9EQ (GB). (74) Agent: ALLSOP, John, Rowland; MacLeod Allsop, Bledington Grounds, Bledington, Gloucestershire OX7 6XL (GB).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
(54) Title: SURGICAL NEEDLE HOLDER <div data-bbox="316 1144 1266 1354" data-label="Image"> </div> (57) Abstract <p>A surgical needle holder for a surgical needle particularly for use during ophthalmic treatment and cosmetic surgery. The holder comprises an insulated electrically conducting support body for mounting the needle and releasable locking means for locking the needle in the body and in electrical contact with the support body. The design reduces the need to handle the surgical needle during the mounting thereof in the support body and holds the needle more firmly in position than heretofore possible with prior devices.</p>		

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SURGICAL NEEDLE HOLDER

FIELD OF THE INVENTION

- 5 The present invention relates to a surgical needle holder and particularly to a surgical needle holder provided with a releasable locking mechanism for a surgical needle to be retained in the holder.

BACKGROUND OF THE INVENTION

10

Surgical needles mounted in specially designed holders are used in medical practice in the areas of for example hair removal by electrolysis such as during ophthalmic treatment, and certain aspects of cosmetic surgery.

- 15 Handling and disposal is important in the use of surgical needles both from the point of view of the health of the patient and the user.

There are various types of surgical needle holders in use at the present time. In one variant the surgical needle is held to the electrically conducting core of the needle holder by
20 means of a mechanism operating in the manner of a drill chuck and in another in the manner of a propelling pencil.

- The first arrangement, during mounting and disposal, necessitates far too much handling of the surgical needle to be acceptable while in the second arrangement the mechanism is not
25 capable of holding the needle in the holder as firmly and positively to the extent required so that amongst other things electrical contact between the needle and the core of the holder is compromised.

SUMMARY OF THE INVENTION

It is an object of the present invention to overcome the disadvantages of the prior art.

5 According to the invention there is provided a surgical needle holder comprising an insulated electrically conducting support body for mounting a surgical needle, a passageway in the body for insertion of the needle shank, and releasable locking means in the passageway for locking the needle shank therein, and in electrical contact with the support body.

10

Preferably the locking means is in the form of a pivotal locking plate mounted in the support body and provided with an aperture for receiving the needle shank in one pivotal position of the locking plate when the shank is inserted in the passageway in the support body. The locking plate is biased to a normally held second pivotal position whereat the plate locks
15 onto the needle shank around the plate aperture to secure the needle shank in the passageway.

20

Advantageously the locking plate is biased to the normally held second pivotal position by means of a coiled spring housed in the support body.

BRIEF DESCRIPTION OF THE DRAWINGS

Other features and advantages of the present invention will become apparent from the following description of a preferred embodiment thereof taken with reference to the
25 accompanying drawings wherein:

Fig. 1 is a cross section of a surgical needle holder according to the invention showing the locking mechanism for the surgical needle in one operating position;

Fig. 2 is the same view as of a surgical holder according to the invention as Fig. 1 but with the locking mechanism in a different operating position; and

Fig. 3 is the same cross sectional view of the surgical needle holder according to the invention as Fig. 1 and 2 but showing a surgical needle locked in the holder by means of the locking mechanism.

BEST MODES OF CARRYING OUT THE INVENTION

10 The surgical holder shown in the drawings comprises an outer cylindrical tube 1, having an inner core 2 forming a projecting nozzle 3 at one end of the tube 1 and a butt end 4 at the rear of the tube 1. The tube 1 and core 2 are formed of an electrically conducting material, and the core 2 is connectable to an R.F generator (not shown) through lead wire 2'.

15 The tube 1 and exposed parts of the core 2 are surrounded by an insulating jacket (not shown).

A blind bore 5 extends into the core 2 of the surgical needle holder from the nozzle end 3. The blind bore 5 crosses a cylindrical cavity 6 formed in the core 2 having a vertical face 7 and an opposing face 8 inclined thereto at an angle α .

The cavity 6 is accessible through a slot 9 formed in the surface of the outer tube 1. An electrically conducting cylindrical plate 10 having an insulated tab portion 11 occupies the cavity with the tab portion 11 extending through the slot 9 in the outer tube 1.

25

By reason of the opposing vertical and inclined faces 7,8 of the cavity 6 the plate 10 is pivotally movable from an upright position as shown in Fig. 1 to a maximum forward inclined position as shown in Fig. 2 and intermediate positions as illustrated in Fig. 3.

The plate 10 is urged to its maximum forward position as shown in Fig. 2 by means of a coiled spring 11 housed in a groove 12 formed in the core 2 and surrounded by the outer tube 1. The plate 10 has a central aperture 13 which, when in its upright pivotal position, is in alignment with the blind bore 5 having the same diameter.

5

One method of loading the surgical needle holder as described with a surgical needle will now be described with reference to the drawings.

In Fig. 2 the locking plate 10 is shown biased to its normal forward rest position.

10

The shank 14 of a surgical needle 15 covered with a protective sheath 15' is inserted into the blind bore 5 in the nozzle 3 of the outer body 1 until it encounters the aperture 13 in the locking plate 10.

15 The shank 14 of the surgical needle 15 engages the periphery of the aperture 13 in the locking plate 10 thereby to push the locking plate 10 anti-clockwise until the shank 14 engages the base of the blind bore at which point the spring 11 urges the locking plate 10 clockwise until the needle shank 14 is held in tight frictional fit and consequently in good electrical contact, within the aperture 13 in the locking plate 10. Any pull on the needle 15
20 tending to remove it from the bore 5 merely serves to increase the grip of the plate 10 in the shank 14. The sheath 15' may then be removed safely.

To release the needle 15 the tab 11 is pulled anti-clockwise by the operator to the position shown in Fig. 1 at which point the needle 15 may be released from the surgical holder
25 under its own weight into a disposable container.

CLAIMS

- 1 A surgical needle holder comprising an insulated electrically conducting support
body for mounting a surgical needle, a passageway in the body for insertion of the
5 needle shank, and releasable locking means in the passageway for locking the
needle shank therein, and in electrical contact with the support body.
- 2 A surgical needle holder as claimed in claim 1 wherein the locking means is in the
form of a pivotal locking plate mounted in the support body and provided with an
10 aperture for receiving the needle shank when the shank is inserted in the
passageway in the support body with the locking plate in one pivotal position, said
locking plate being biased to a normally held second pivotal position whereat the
plate locks onto the needle shank around the plate aperture to secure the needle
shank in the passageway.
- 15 3 A surgical needle as claimed in claim 2 wherein the locking plate is mounted in a
cavity in the support body, one face of the cavity lying at an inclination to an
opposed face of the cavity thereby to provide a degree of operating movement of
the plate from an upright position in said first pivotal position to an inclined position
20 in said second pivotal position to lock onto the needle shank.
- 4 A surgical needle holder as claimed in claim 3 wherein the locking plate is biased to
the normally held second pivotal position by means of a coiled spring housed in the
support body.
- 25 5 A surgical needle holder as claimed in claim 3 or 4 wherein the locking plate is
provided with an operating tab extending from the cavity in the support body.

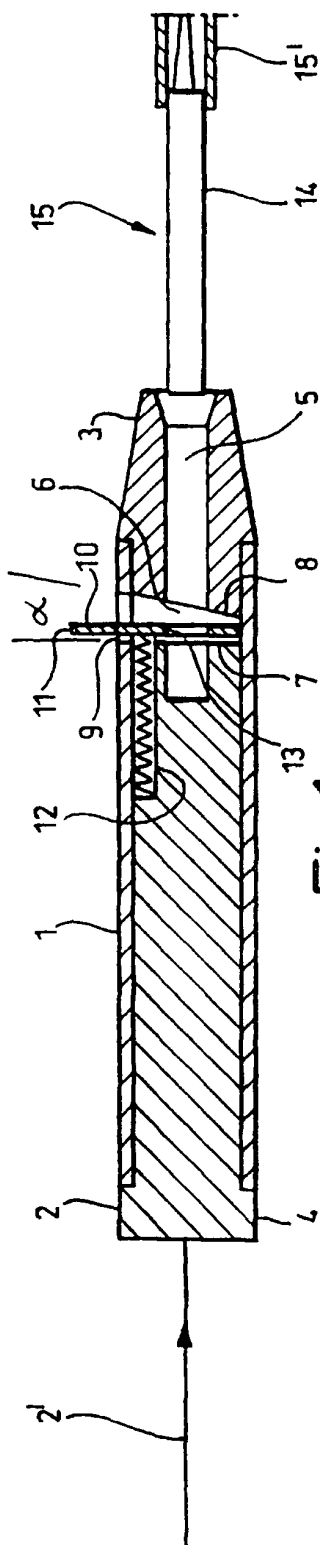


Fig.1.

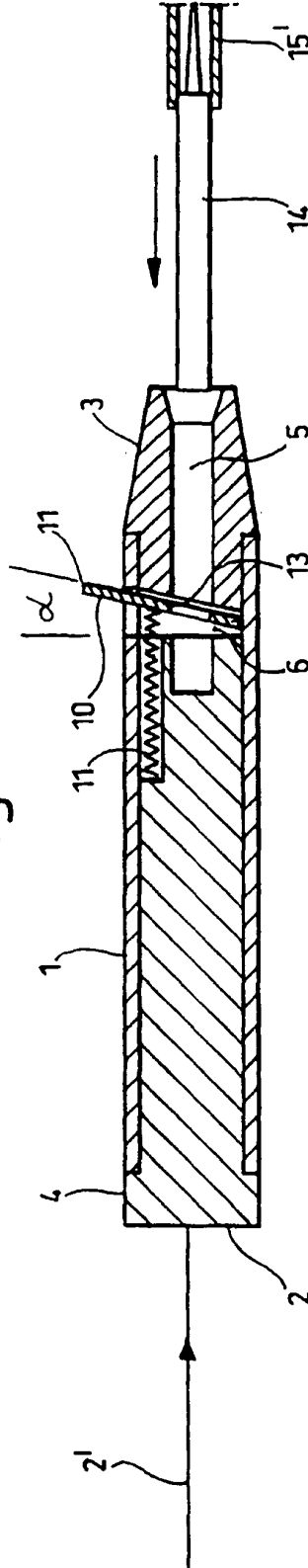


Fig.2.

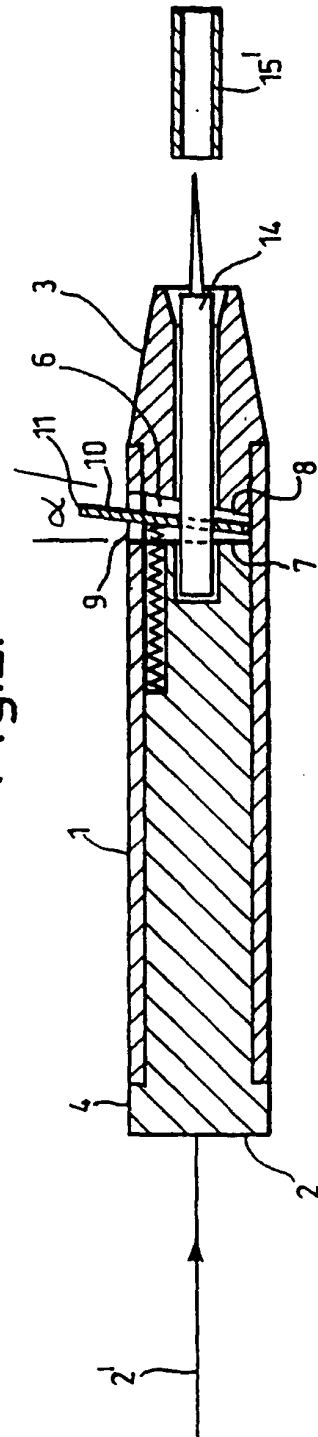


Fig.3.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 99/00142

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A61B17/39 A61B17/41

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 A61B F16B A61F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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Y	see column 3, line 13 - line 18; figure 3 ---	2-5
X	US 3 799 168 A (PETERS R) 26 March 1974 see column 1, line 17 - line 21 see column 2, line 37 - line 50; figure 4 ---	1
X	DE 295 03 626 U (STUCKENBROCK MEDIZINTECHNIK GM) 20 April 1995 see page 4, last paragraph see page 5, last paragraph; figure 5 ---	1
Y	EP 0 371 829 A (CAILLAU ETS) 6 June 1990 see column 3, line 52 - line 56 see column 5, line 58 - column 6, line 6 see column 6, line 31 - line 46; figure 1 ---	2-5
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☒ Further documents are listed in the continuation of box C.

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Date of the actual completion of the international search

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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